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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/187,370	11/06/1998	DONALD C. WILCOXSON	22-0009	2971

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TRW  
LAW DEPARTMENT  
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BUILDING E2/6072  
REDONDO BEACH, CA 90278

EXAMINER

ABELSON, RONALD B

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 10/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/187,370

Applicant(s)

WILCOXSON ET AL.

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,6-12,14,15,17,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,6-10,17,19 and 20 is/are allowed.
- 6) ☒ Claim(s) 11,12,14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 1998 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

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***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (US 5,754,536) in view of Leung et al. (6,400,697).

Schmidt teaches a method and apparatus for interference management (col. 4 lines 36 - 51) of a satellite communications system (fig. 3) serving multiple users (fig. 3 elements 42, 52, 54). The system contains a satellite (fig. 3 element 44) supporting communications uplinks and downlinks (fig. 3 element 56) between multiple users (fig. 3 elements 42, 52, 54). The system also contains a control processor (fig. 3 box 74) that minimizes intra-system interference between the users by allocating a connection parameter / carrier frequency and timeslot, TDMA/FDMA (col. 5 lines 43 - 59, col. 4 lines 36 - 51).

Schmidt fails to teach multiple users simultaneously accessing the same time slot and frequency channel.

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Leung teaches that users in non-adjacent sectors can simultaneously use the same time slot and frequency channel (col. 5 lines 24 - 38).

Therefore it would have been obvious to one of ordinary skill in the art, having both Schmidt and Leung before him/her and with the teachings [a] as shown by Schmidt, a method and apparatus for interference management of a satellite communications system serving multiple users, and [b] as shown by Leung, users in non-adjacent sectors can simultaneously use the same time slot and frequency channel, to be motivated to modify the system of Schmidt by allowing for a given time slot and frequency channel to be used simultaneously. This modification can be performed in software. This would allow the system to handle additional users without increasing the number of time slots and frequency channels.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Schmidt and Leung as applied to claim 11 above, and further in view of Dent (US 5,631,898).

The combination of Schmidt and Leung is silent on the type of antenna.

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Dent (US 5,631,898) teaches multi-beam antennas in a FDMA/TDMA communications environment (fig. 7 element 470).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Schmidt and Leung and Dent before him/her and with the teachings [a] as shown by the combination of Schmidt and Leung, a method and apparatus for interference management of a satellite communications system serving multiple users, and [b] as shown by Dent multi-beam antennas in a FDMA/TDMA communications environment, to be motivated to modify the system of the combination of Schmidt and Leung by using a multi-beam antenna in the system (fig. 3 element 44) This would improve system since multi-beam antennas can cover more area than single beam antennas.

4. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Schmidt, Leung, and Dent as applied to claims 11 above, and further in view of Sorber (US 5,631,898).

Regarding claim 14, the combination of Schmidt, Leung, and Dent teaches user database parameter / time and frequency (Schmidt: col. 5 lines 43 - 59, col. 4 lines 36 -51), antenna pattern parameters (Dent: col. 40 line 65 - col. 41 line 14),

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and spacecraft/antenna pointing error parameters (Dent: attitude control, col. 44 lines 31 - 54)

The combination of Schmidt, Leung, and Dent fails to teach link condition monitoring.

Sorber teaches link condition monitoring (col. 1 line 66 - col. 2 line 17).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Schmidt, Leung, and Dent and Sorber before him/her and with the teachings [a] as shown by the combination of Schmidt, Leung, and Dent, a method and apparatus for interference management of a satellite communications system serving multiple users, and [b] as shown by Sorber link condition monitoring, to be motivated to modify the system of the combination of Schmidt, Leung, and Dent by monitoring link capacity. This could be performed by continually measuring bandwidth usage and availability. This would be beneficial in preventing congestion (Sorber: col. 1 line 66 - col. 2 line 17).

Regarding claim 15, periodically re-allocates connection parameters to each user terminal based upon an updated plurality of communication system parameters (Schmidt: reuse, reallocated, col. 4 lines 37 - 51).

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***Allowable Subject Matter***

5. Claims 1, 6-10, 17, 19, and 20 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: Regarding independent claim 1, nothing in the prior art teaches or fairly suggests accessing at least one communications system parameter from a group consisting of antenna pattern parameters, spacecraft/antenna pointing error parameters, and link condition database parameters, in combination with the other limitations listed in the claim. Regarding independent claim 19, nothing in the prior art teaches or fairly suggests accessing at least two communications system parameter from a user database, antenna pattern database, spacecraft/antenna pointing error database, and link condition database, in combination with the other limitations listed in the claim.

***Response to Arguments***

7. Applicant's arguments filed 10/21/02 have been fully considered but they are not persuasive in regards to claim 11. The examiner agrees with the applicant that modified independent claims 1 and 19 are in condition for allowance. Regarding claim 11, the applicant argues, see page 5 lines 10 - 17, that the

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combination of Schmidt and Leung does not teach "selecting appropriate frequency channel and time slots for each active user terminal to provide the maximum distances between user terminals operating on the same frequency and time slot." As previously stated Leung teaches adjacent sectors do not use the same frequency/time channels (col. 5 lines 24-38). The distance between non-adjacent sectors, in Leung, is sufficient to nullify the interference that is caused by two terminals operating on the same time slot and frequency channel.

#### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

*ra*  
Ronald Abelson  
Examiner  
Art Unit 2666

*ra*  
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October 22, 2002

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*Seema S. Rao*

Seema S. Rao

Supervisory Patent Examiner

AU 2666

10/22/2002

Official fax number: 703-872-9314